

**DESCRIPTION**

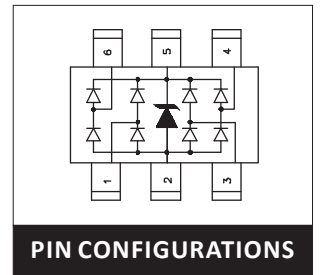
The SESRV05-4 is a dual USB port protection array that features ultra low capacitance. This device can be used in applications such as video cards, SMART phones, Gigabit Ethernet and other computer interfaces. Designed for ESD protection, the SESRV05-4 can clamp the effects of electrical fast transients on the power bus.

The SESRV05-4 combines 8 low capacitance steering diodes for up to four individual data or transmission lines and one TVS diode for power bus protection. This device is available in the space-saving SOT-23-6 package configuration, which minimizes lead inductance to prevent overshoot voltages during high ESD current events. The SESRV05-4 meets the IEC 61000-4-2, 61000-4-2 and 61000-4-5 requirements.



**FEATURES**

- >80 Watts peak pulse power( $t_p=8/20\mu s$ )
- >Protects four I/O lines
- >Low clamping voltage
- >Small package: SOT23-6L
- >Low leakage current
- >Weight 16 Milligrams



**APPLICATIONS**

- >USB 2.0 Power and Data Line Protection
- >Video Graphics Cards
- >Monitors and Flat Panel Displays
- >Digit Video Interface (DVI)
- >10/100/1000 Ethernet
- >Notebook Computers
- >ATM Interfaces

**IEC COMPATIBILITY**

- >IEC 61000-4-2(ESD) $\pm 15KV$ (air), $\pm 8KV$ (contact)
- >IEC61000-4-4 (EFT) 40A (5/50ns)
- >IEC61000-4-5 (Lightning) 5A (8/20 $\mu s$ )

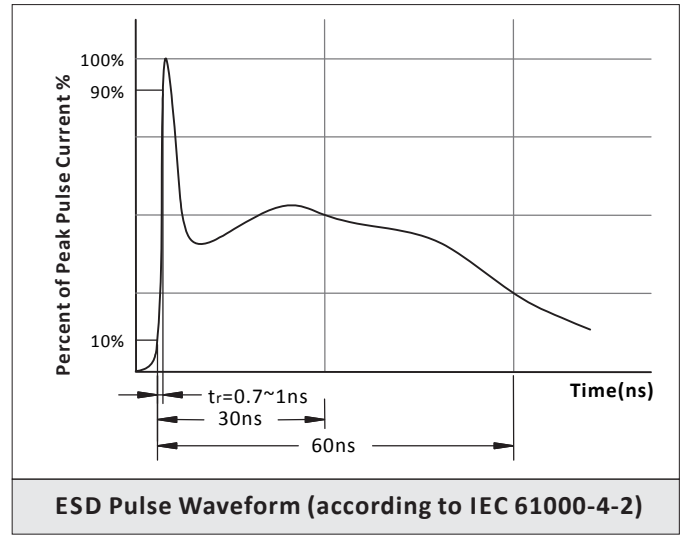
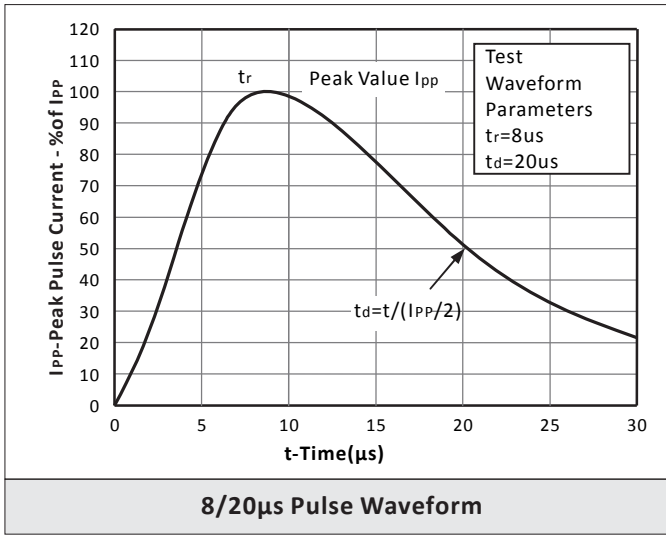
**MAXIMUM RATINGS AND CHARACTERISTICS** Ratings at 25°C ambient temperature unless otherwise specified.

| MAXIMUM RATINGS @ 25°C UNLESS OTHERWISE SPECIFIED |                  |         |       |
|---|------------------|---------|-------|
| PARAMETER   | SYMBOL           | VALUE   | UNIT  |
| Peak Pulse Power ( $t_p=8/20\mu s$ waveform)      | PPP              | 80      | Watts |
| Operating Temperature Range                       | T <sub>J</sub>   | -55~125 | °C    |
| Storage Temperature Range                         | T <sub>STG</sub> | -55~150 | °C    |

**ELECTRICAL CHARACTERISTICS**

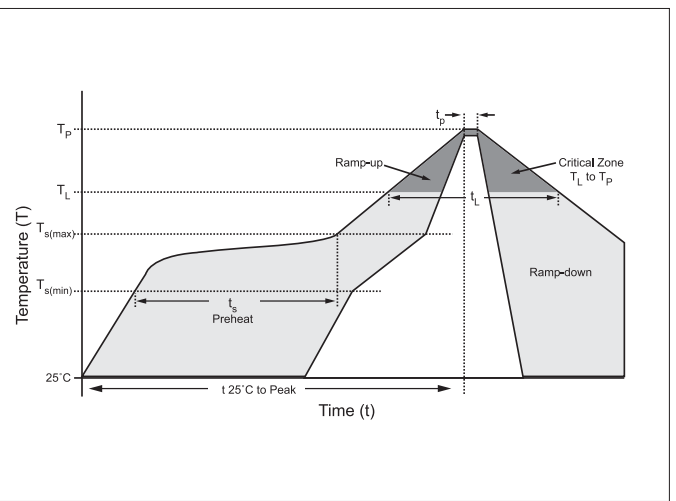
| ELECTRICAL CHARACTERISTICS PER LINE @ 25°C UNLESS OTHERWISE SPECIFIED |                |                           |                         |                     |                         |                |    |                          |                                  |                                  |
|---|----------------|---------------------------|-------------------------|---------------------|-------------------------|----------------|----|--------------------------|----------------------------------|----------------------------------|
| PART NUMBER   | DEVICE MARKING | V <sub>RWM</sub> (V) Max. | V <sub>B</sub> (V) Min. | I <sub>T</sub> (mA) | V <sub>C</sub> @1A Max. | V <sub>C</sub> |    | I <sub>R</sub> (uA) Max. | C <sub>T</sub> I/O-GND (pF) Typ. | C <sub>T</sub> I/O-I/O (pF) Typ. |
|   |                |                           |                         |                     |                         | Max.           | @A |                          |                                  |                                  |
| SESRV05-4   | V05            | 5.0                       | 6.0                     | 1                   | 12.5                    | 17.5           | 5  | 1                        | 0.8                              | 0.4                              |

**CHARACTERISTIC CURVES**

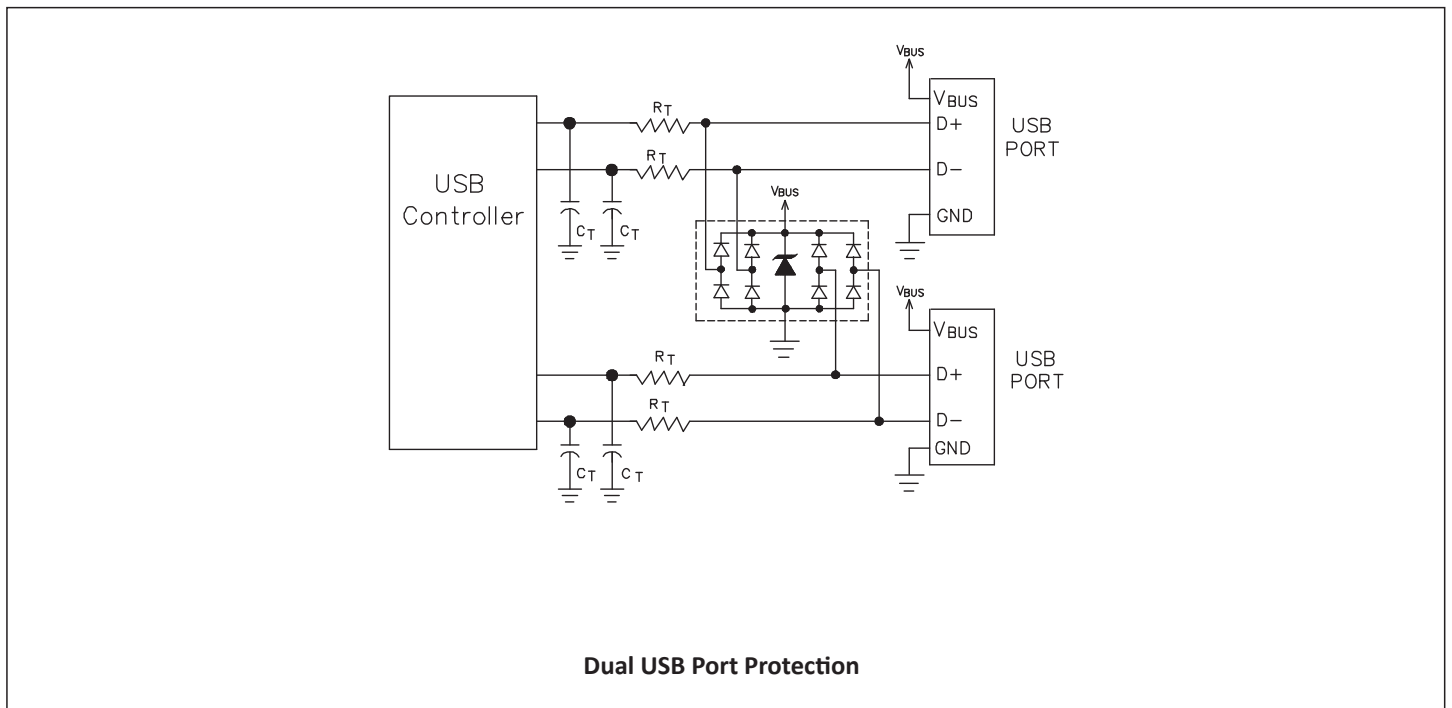
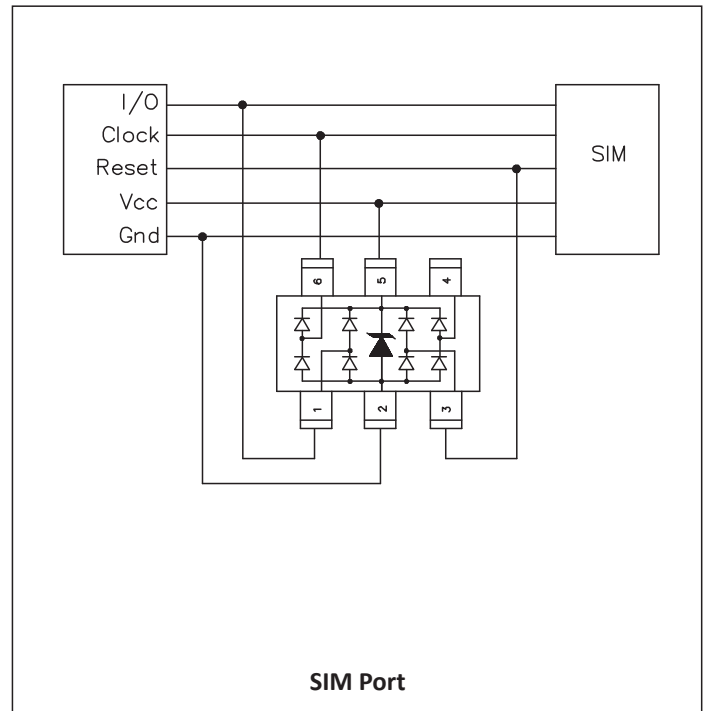
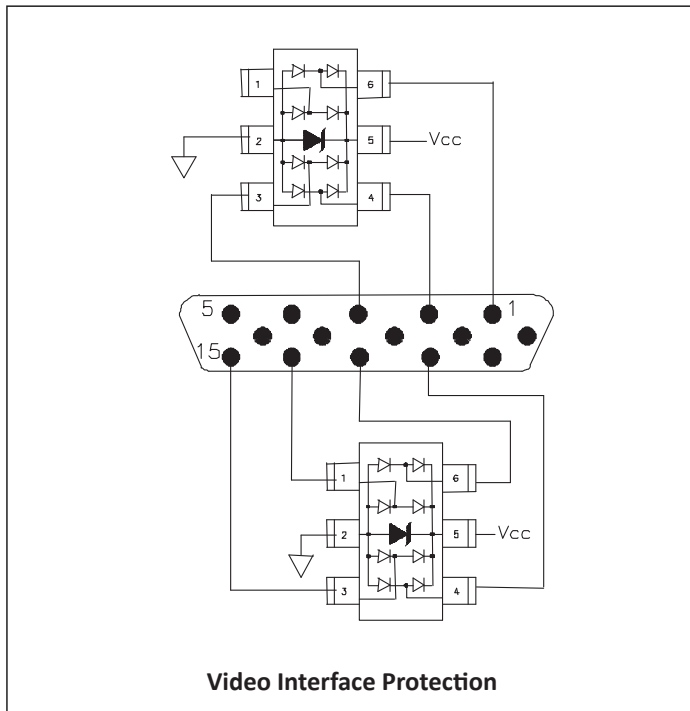


**REFLOW PROFILE**

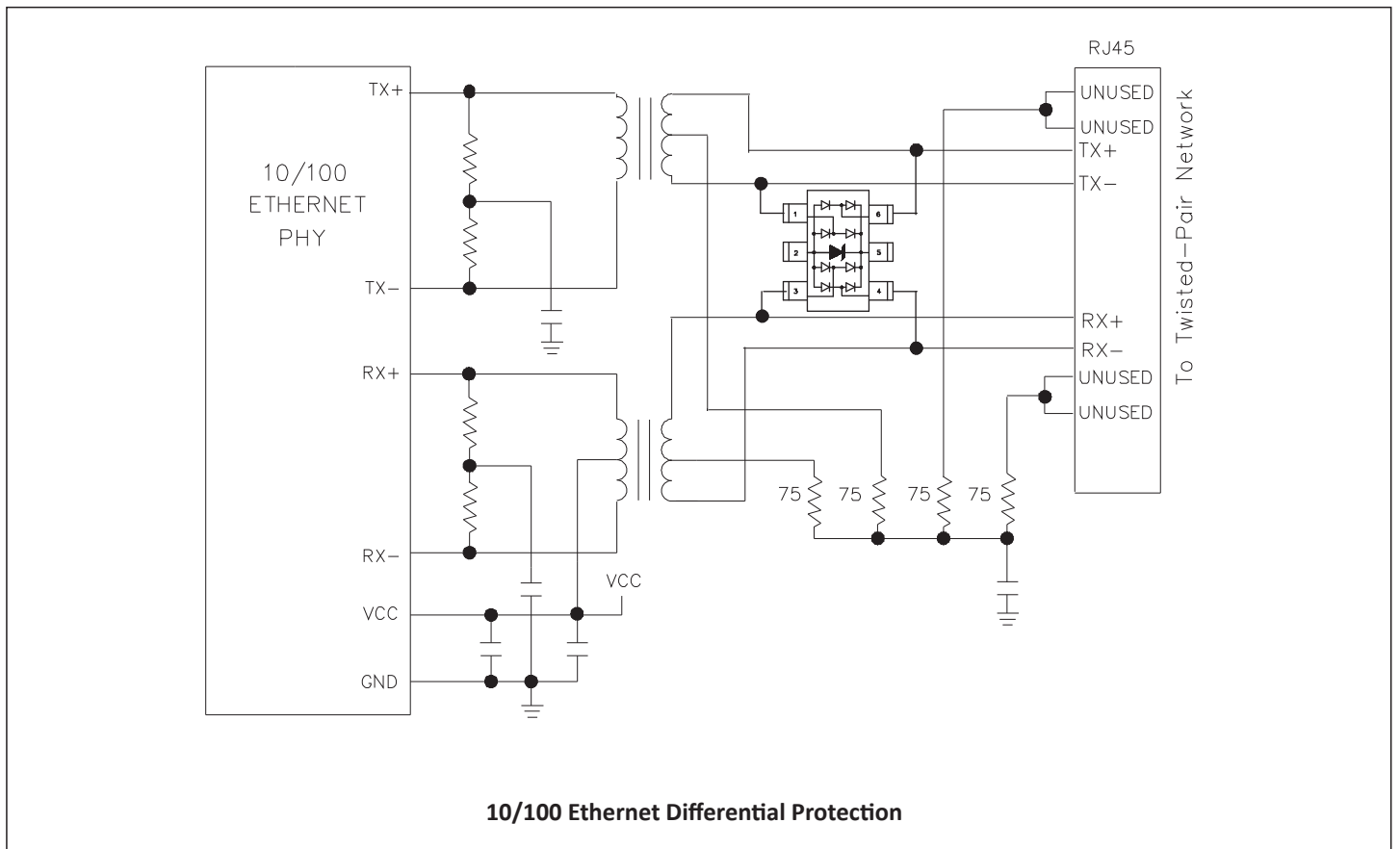
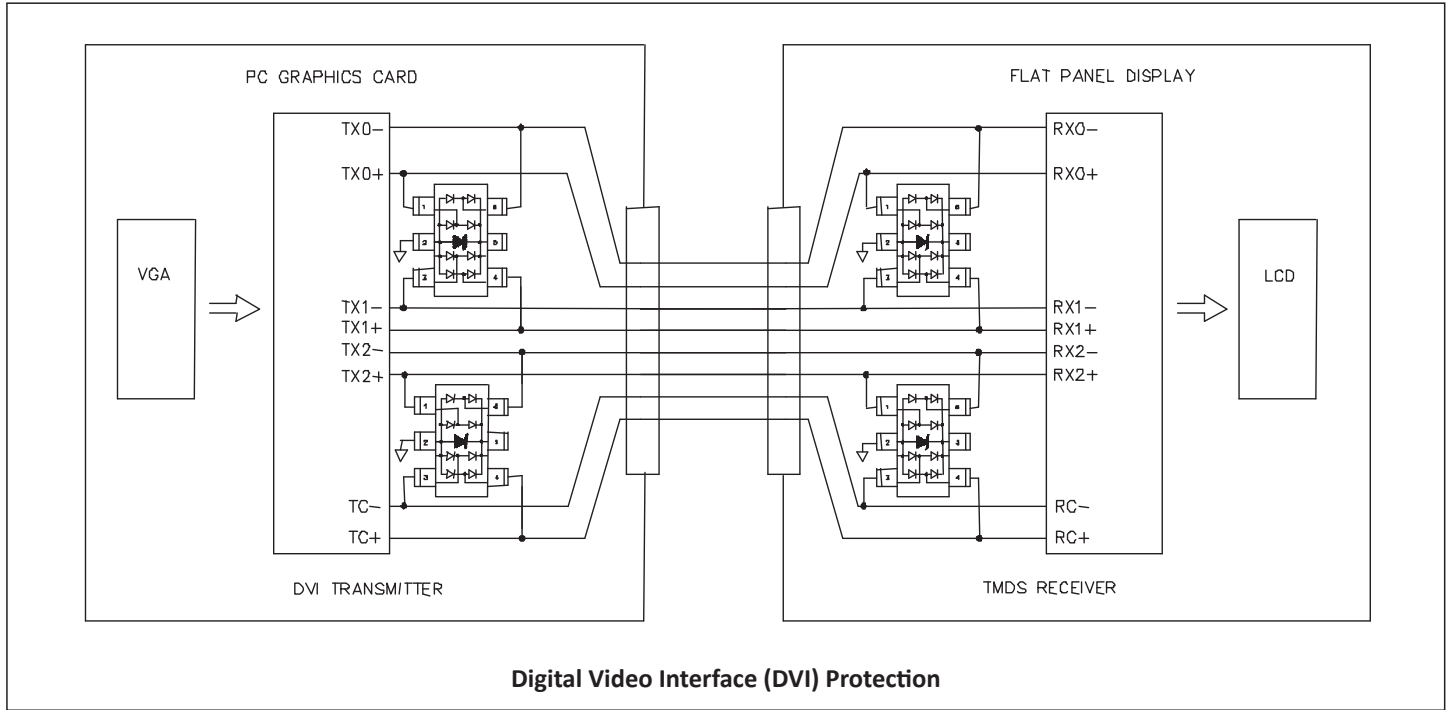
| Reflow Condition                                  |                             | Lead-free assembly |
|---|-----------------------------|--------------------|
| Pre Heat  | Temperature Min (Ts(min))   | 150°C              |
|   | Temperature Max (Ts(max))   | 200°C              |
|   | Time (min to max) (ts)      | 60 – 180 secs      |
| Average ramp up rate (Liquidus Temp (TL) to peak) |                             | 3°C/second max     |
| Ts(max)to TL - Ramp-up Rate                       |                             | 3°C/second max     |
| Reflow  | Temperature (TL) (Liquidus) | 217°C              |
|   | Time (min to max) (tL)      | 60 – 150 seconds   |
| Peak Temperature (TP)                             |                             | 260°C              |
| Time within 5°C of actual peak Temperature (tp)   |                             | 20 – 40 seconds    |
| Ramp-down Rate                                    |                             | 6°C/second max     |
| Time 25°C to peak Temperature (TP)                |                             | 8 minutes Max.     |
| Do not exceed                                     |                             | 260°C              |



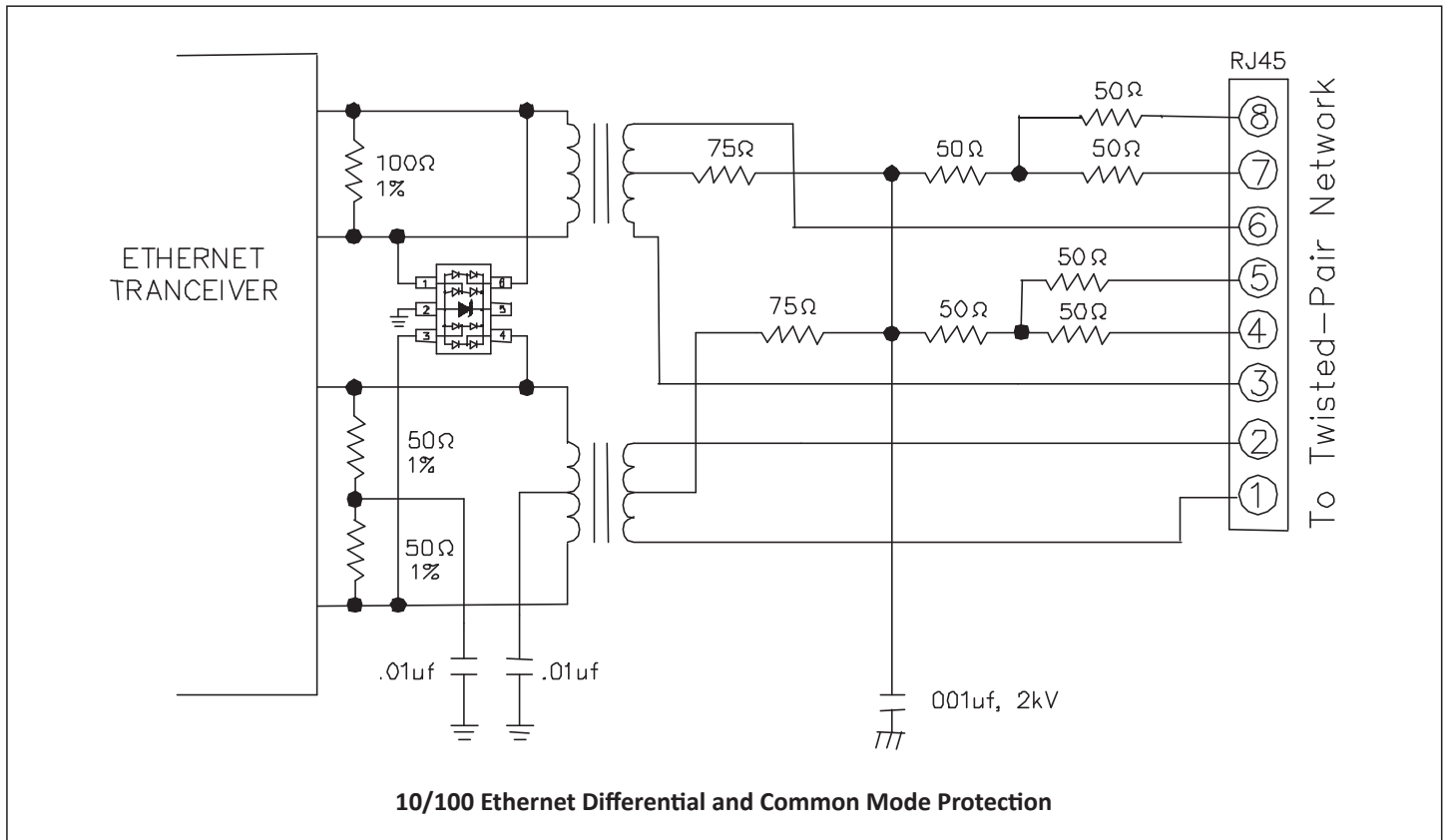
**TYPICAL APPLICATIONS**



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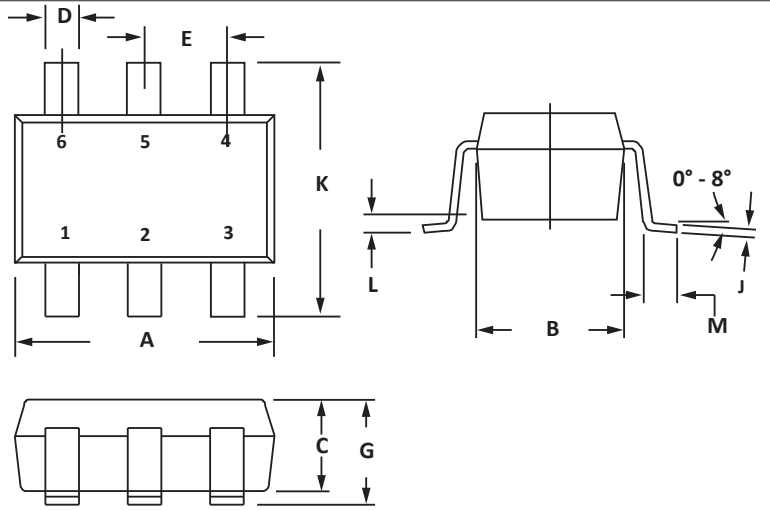


**TYPICAL APPLICATIONS**



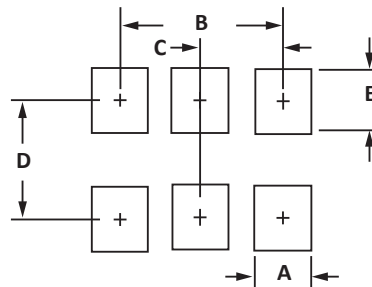
**SOT-23-6 PACKAGE INFORMATION**

| OUTLINE DIMENSIONS |             |      |        |       |
|--------------------|-------------|------|--------|-------|
| DIM                | MILLIMETERS |      | INCHES |       |
|                    | MIN         | MAX  | MIN    | MAX   |
| A                  | 2.80        | 3.05 | 0.110  | 0.120 |
| B                  | 1.50        | 1.75 | 0.059  | 0.070 |
| C                  | 0.90        | 1.30 | 0.036  | 0.051 |
| D                  | 0.30        | 0.40 | 0.012  | 0.016 |
| E                  | 0.85        | 1.05 | 0.033  | 0.040 |
| G                  | 0.90        | 1.45 | 0.036  | 0.057 |
| J                  | 0.09        | 0.20 | 0.003  | 0.008 |
| K                  | 2.60        | 3.00 | 0.102  | 0.118 |
| L                  | 0.0         | 0.15 | 0.0    | 0.006 |
| M                  | 0.30        | 0.60 | 0.012  | 0.024 |



**RECOMMENDED PAD LAYOUT DIMENSIONS**

| PAD LAYOUT DIMENSIONS |             |         |
|-----------------------|-------------|---------|
| DIM                   | MILLIMETERS | INCHES  |
|                       | NOMINAL     | NOMINAL |
| A                     | 0.70        | 0.028   |
| B                     | 1.90        | 0.074   |
| C                     | 0.95        | 0.037   |
| D                     | 2.40        | 0.094   |
| E                     | 1.00        | 0.039   |



**ORDERING INFORMATION**

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SESRV05-4   | SOT-23-6          | 3000PCS  | 7"        |

## **CONTACT US**

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